Request to Archive
With The National Centers for Environmental Information
For MSU/AMSU Level 1C FCDR
Provided by NESDIS/STAR

2013-06-07

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

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2. Name the organization or group responsible for creating the dataset.

NOAA/NESDIS/STAR

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

To be archived data include the MSU Level-1c radiance FCDR for the period of 1978-2006 onboard nine NOAA polor orbiting satellites inclduing TIROS-N, NOAA-6, -7, -8,-9,-10,-11,-12,-14. These radiances are inter-calibrated variables from the raw counts data stored in the MSU level-1b files for these satellites. The inter-calibration method are named as Integrated Microwave Inter-Calibration Approach (IMICA), formerly known as simultaneous nadir overpass (SNO) method. Also archived include level-1c radiances derived from NOAA operational calibration for comparision purposes. The operational calibrated radiances have been widely used in NWP data assimilation for improved weather forecasting. The IMICA calibrated radiances remove or minimize biases found in the operational calibration.

Limb adjusted radiances for both the IMICA and operational calibrations are aslo included for certain type of climate applications, such as layer-temperature development using the radiance datasets.

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)

From 1978-10-21 to 2006-10-10

5. Edition or version number(s) of the dataset:

Version 1.3

6. Describe the level to which the data are processed. For example, are these unprocessed raw observations, derived parameters, quality controlled or inter-calibrated data, etc.?

The radiances are inter-calibrated, quality-controlled MSU level-1c FCDR derived from raw counts data in the MSU level-1b files

7. Approximate date when the dataset was or will be released to the public:

2013-08-01

8. Who are the expected users of the archived data? How will the archived data be used?

i) Climate Reanalysis Developers
ii) Scientists doing consistent satellite retrievals for climate monitoring
iii) Developers of consistent upper-air temperature time series
iv) Climate observation/validation community
v)Validation/verification of climate model simulations

9. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?

20 years of IMICA recalibrated radiances from 1987-2006 had been used in NCEP CFSR and NASA MERRA reanalyses, which produced inter-satellite biases consistent to IMICA inter-calibration

10. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?

MSU level-1b files in CLASS archive can be used as input data, and then the IMICA recalibrated radiances are the output data

11. List the input datasets and ancillary information used to produce the data.

input datasets are NOAA MSU Level-1b files
ancillary data (i) cdbin.dat: instrument related coefficients
(ii) sfctype.dat: surface land type (sea,land,ice,coast)
(iii)limbn10.dat: limb correction coefficients

12. List web pages and other links that provide information on the data.

data files are in NetCDF format, contains required metadata described in NetCDF Metadata Guidelines for IOC NOAA Climate Data Records

13. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. Zou, C.-Z., W. Wang, 2012, MSU/AMSU Radiance Fundamental Climate Data Record Derived from Integrated Microwave Inter-Calibration Approach, Climate Algorithm Theoretical Basis Document (C-ATBD), NOAA/NESDIS
   http://www.star.nesdis.noaa.gov/smcd/emb/mscat/documents/MSU_AMSU_CATBD_V1.0.pdf
2.  Zou, C.-Z., et al. (2006). Recalibration of microwave sounding unit for climate studies using simultaneous nadir overpasses. Journal of Geophysical Research, 111(D19), D19114
   http://www.agu.org/journals/abs/2006/2005JD006798.shtml
3.  Zou, C.-Z., M. Gao, M.Goldberg, 2009, Error structure and atmospheric temperature trends in observations from the Microwave Sounding Unit, J. Climate, 22, 1661-1681, DOI: 10.1175/2008JCLI2233.1
   http://journals.ametsoc.org/doi/abs/10.1175/2008JCLI2233.1
4.  Zou, C.-Z., W.Wang (2010). Stability of the MSU-derived atmospheric temperature trend. Journal of Atmospheric and Oceanic Technology, 27(11), 1960-1971
   http://journals.ametsoc.org/doi/abs/10.1175/2009JTECHA1333.1
5. MSU level 1c radiance netCDF file specification
6. MSU FCDR processing code documentation
7. Data flow diagrams

14. Indicate the data file format(s).

1. netCDF-3

15. Are the data files compressed?

No

16. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

File names meet GSICS file naming convention
e.g. W_US-NESDIS-STAR,SATCAL+OPR+IMICA,C_KNES_NOAA-SatlliteName+Dyyyyddd.Shhmm.Ehhmm_L1C_version.nc
Level-1c files are orbit by orbit corresponding to level-1b

17. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?

Access through STAR FTP site which will be provided by STAR POC

18. What is the total data volume to be submitted?

Historic Data: all historic data or data submitted as a completed collection.

Total Data Volume:	70GB
Number of Data Files:	222000

19. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.

If new calibration approach is developed which results in improved accuracy of the data, an update will be conducted

20. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location:	College Park, MD
System Name:	NOAA/NESDIS/STAR Linux
System Owner:	DOC/NOAA/NESDIS/STAR > Center for Satellite Applications and Research, NESDIS, NOAA, U.S. Department of Commerce
Additional Information:	

21. What are the possible methods for submitting the data to NCEI? Select all that apply.

1. FTP PULL
2. FTP PUSH
3. Physical Media Delivery

22. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

1. User interface to order and stage data for download
2. Direct download links

23. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?

No known constraints apply to the data.

24. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.

The dataset potentially has a variety of applications such as i) input to climate reanalysis to improve reanalysis consistency; ii) serves as FCDR for developing layer-temperature TCDR for climate change monitoring; iii) used as input FCDR for conisstent satellite retrievals of a variety of variables that need sounding data input.
Archiving the dataset helps NESDIS to establish and maintain the leadership position of providing the best, recalibrated climate data services.

25. Are the data archived at another facility or are there plans to do so? Please explain.

The data are temporailly archived in STAR internal machines until the CDRP archive is fully operational

26. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?

The agreement for operational transition and archiving of this dataset is established in the SOW submitted to CDRP

27. Do you have a data management plan for your data?

No

28. Have funds been allocated to archive the data at NCEI?

Operational transition team is funded by CDRP program at both STAR and NCDC for archiving the dataset

29. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.

NOAA CDRP funded project; Project #0015

30. Is there a desired deadline for NCEI to archive and provide access to the data?

Archive by: 2013-08-01
Accessible by:

31. Add any other pertinent information for this request.

None